

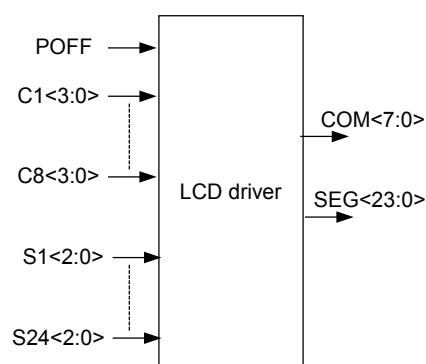
### DATA SHEET

#### Typical Applications

→ Display systems

#### Features

- Technology CMOS
- Area : 1mm<sup>2</sup> (3500μm x 284μm)
- Consumption : 1.3 mA typical
- Operating supply voltage : 4.5 V – 5.5 V
- Display duty : 1/8 (¼ bias)
- Common output : 8 outputs
- Segment output : 24 outputs
- Power down mode



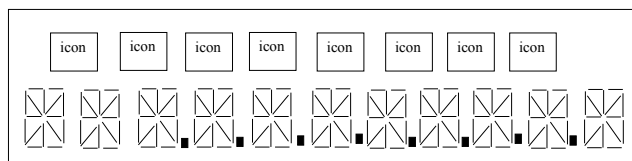
Pin Name	Description
<b>POFF</b>	Power down control (active high)
<b>S1&lt;2:0&gt; to S24&lt;2:0&gt;</b>	Switches control 3-bit inputs for segments.
<b>C1&lt;3:0&gt; to C8&lt;3:0&gt;</b>	Switches control 4-bit inputs for commons
<b>COM&lt;7:0&gt;</b>	Commons outputs
<b>SEG&lt;23:0&gt;</b>	Segments outputs
<b>VDD</b>	High power supply
<b>VSS</b>	Low power supply

#### Product Description

The LCD driver generates voltages to drive LCD (Liquid Crystal Display). The 8 commons and the 24 segments enable to display for example 11 alphanumeric characters, 8 points and 8 icons.

A power down mode is available

S1...S24 and C1...C8 can be generated by a digital block including a 24x8 RAM connected to a 3-bit coder for the segments and a 4-bit coder for the commons.



## Absolute Maximum Ratings

Symbol	Parameter	Min	Typ	Max	Unit
VDD	Power supply voltage	4.5		5.5	V
T <sub>j</sub>	Junction temperature	-40		85	°C
T <sub>st</sub>	Storage temperature	-65		150	°C

## DC characteristics

Symbol	Parameter	Min	Typ	Max	Unit
VDD	High power supply	4.5		5.5	V
VSS	Low power supply		0		V
IDD	Supply Current		1.3		mA
IDD_PD	Supply Current in Power Down Mode			1	μA
TH <sub>1/4</sub>	Threshold 1/4 VDD	1.1		1.35	V
TH <sub>1/2</sub>	Threshold 1/2 VDD	2.25		2.7	V
TH <sub>3/4</sub>	Threshold 3/4 VDD	3.4		4.1	V
VIL	Digital Input low level	VSS		0.3×VDD	V
VIH	Digital Input high level	0.7×VDD		VDD	V

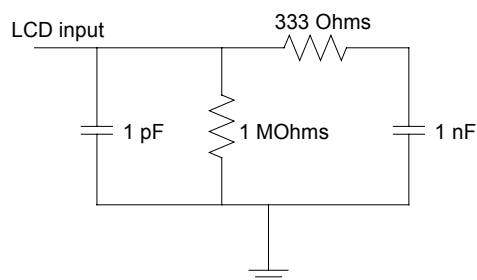
## AC characteristics

Symbol	Parameter	Min	Typ	Max	Unit
	Phase margin	65			Deg

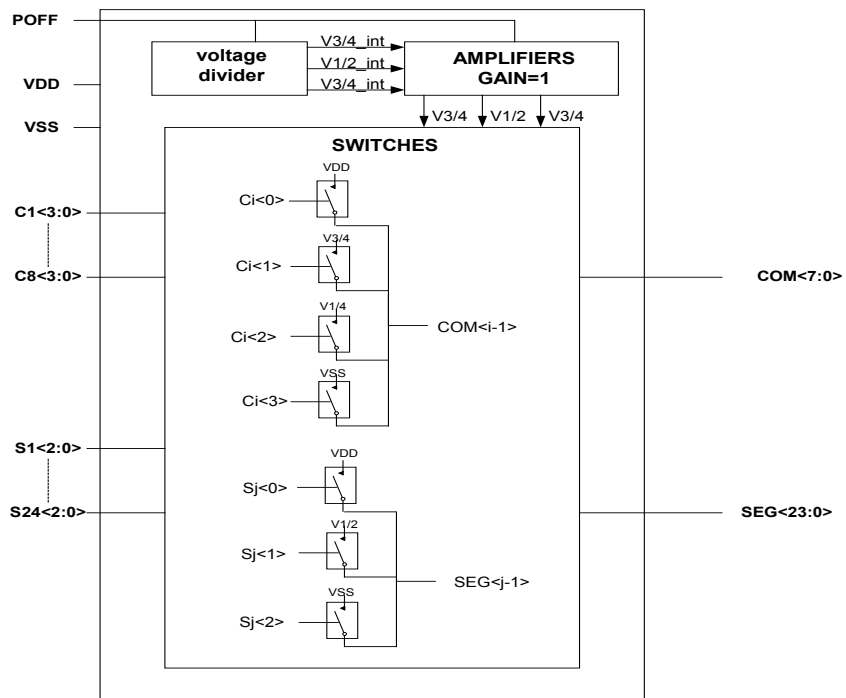
## TIMING CHARACTERISTICS

Symbol	Parameter	Min	Typ	Max	Unit
T <sub>f</sub>	Fall time			10	μs
T <sub>r</sub>	rise time			60	μs

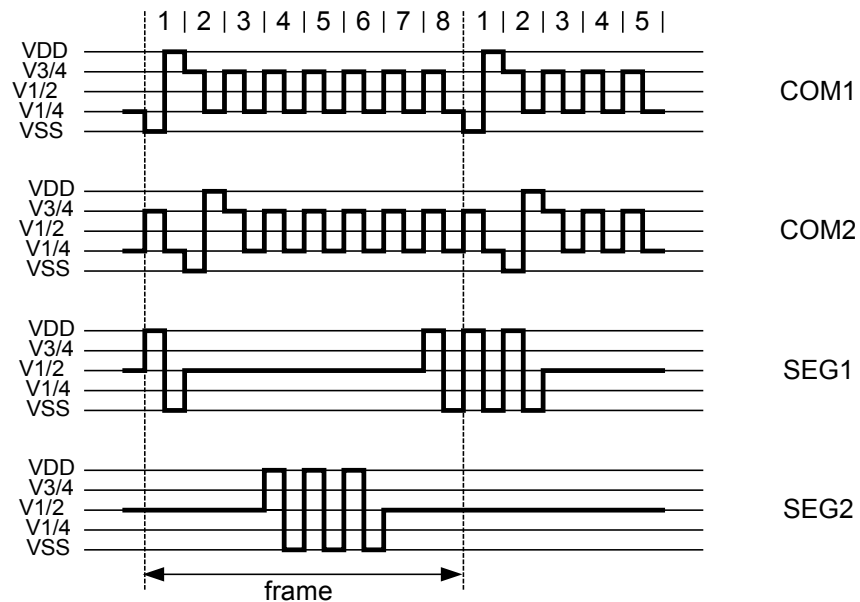
## Estimated LCD input load



## Functional Block Diagram



## Waveform Example



The commons are successively activated (rise from VSS to VDD).

A segment is activated by a voltage fall from VDD to VSS.

A pixel goes on when its corresponding common and its corresponding segment are active in the same time.